TSS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FIELD OPERATIONS - BUREAU OF AIR QUALITY

OPERATING PERMIT

In accordance with provisions of the Air Pollution Control Act, the act of January 8, 1960, P.L. 2119, as amended, and after due consideration of an application received under Chapter 127 of the Rules and Regulations of the Department of Environmental Protection, the Department hereby issues this permit for the operation of the air contamination source(s) described below:

Permit No.	OP-09-0015	**Source(s)**	Facility VOC and NOx RACT
Owner	Rohm and Haas Company	**Air**	As Described herein
Address	P.O. Box 219	**Cleaning**	
	Bristol, PA 19007	**Device**	
Attention	Mr. Robert Casselberry	**Location**	Old Route 13 and Route 413
	Environmental Manager		Bristol Township
			Bucks County

This permit is subject to the following conditions:

1. That the source(s) and any associated air cleaning devices are to be:

   a. operated in such a manner as not to cause air pollution;
   b. in compliance with the specifications and conditions of all applicable plan approvals issued;
   c. operated and maintained in a manner consistent with good operating and maintenance practices.

2. This permit is valid only for the specific equipment, location and owner named above.

(SEE ADDITIONAL CONDITIONS ATTACHED)

Failure to comply with the conditions placed on this permit is a violation of Section 127.444. Violation of this or any other provision of Article III of the Rules and Regulations of the Department of Environmental Protection will result in suspension or revocation of this permit and/or prosecution under Section 9 of the Air Pollution Control Act.

Issued ~~4/29/1999~~

Expires ~~4/29/2004~~

Francine Carlini
Regional Manager
Air Quality

cc: Division of Permits, RCSOB
Administration
SEFO
Re (GJC97)252-26

CONDITIONS (continued):

3. This Operating Permit incorporates Reasonably Available Control Technology (RACT) determinations, as required by Title I provisions of the Clean Air Act Amendments, and 25 Pa. Code Sections 129.91-129.95. This Operating Permit is issued to Rohm and Haas Company, located at Old Route 13 and Route 413, Bristol Township, Bucks County.

4. The sources and control devices covered under this Operating Permit are located in the following six areas of the facility: Emulsions Area, AtoHaas Area, Polymers Area, Plastics Additives Area, Facilities Area, and Bristol Research Park.

5. This Operating Permit is issued for the following applicable Plan Approvals; in addition, this Operating Permit supersedes all existing Operating Permits and Temporary Operating Permits issued:

Operating Permit

Emulsions Area:	**Sources**
09-313-003A	Emulsions - CRU and Plastics - Additives Building 66
09-313-053A	Emulsions - CRUX
AtoHaas Area:	
09-313-009	Plastics – Pellet Molding – Building 133
09-313-009C	Plastics – Pellet Molding – Building 133
09-313-072	Plastics – Pellet Molding – Building 133A
09-313-073	Plastics – Pellet Molding – Building 133A
09-313-081	Plastics – Pellet Molding – Building 133A
Polymers Area:	
09-313-006	Polymers - 30A Tank Farm
09-313-057	Polymers – Building 30C
09-313-059	Polymers – Polytribo Building 34
09-313-060	Polymers - 52A Tank Farm and Building 30
09-313-061	Polymers – Building 30
09-313-061A	Polymers – Building 30
PA-09-0015	Polymers – MMA Distillation
09-313-077B	Polymers – 39B Tank Farm
09-312-023	Polymers – 30D Tank Farm
Plastics Additives Area:	
09-313-064	Plastics – Additive Building 115

CONDITIONS (continued):

Operating Permit

Facilities Area:

09-302-065	Facilities - Powerhouse Building 42
09-302-065A	Facilities - Powerhouse Building 42
09-302-067	Facilities - Powerhouse Building 42
09-313-076	Facilities - WWTP

Bristol Research Park:

09-313-066	Research Park – Building 137

6. Emulsion Area

A. Emissions from the sources in this area shall be limited to the following:

Source/Group	VOC Emissions, lbs./hr.	VOC Emissions, lbs./yr.*
CRU Scrubber	0.29	2,540
CRUX Scrubber	0.225	1,971
CRU Ventilation Stack		7,000
CRUX Ventilation Stack		2,400
Tank Farm Raw Material)		4,500
Storage Tank and Tank Truck Loadin Finished Product		458
Transfer Piping Fugitive Emissions		1,701
Whitewater (Wastewater containing less than 2% polymer solids Pits		180
Total		20,7550

*as a 12 month rolling sum

B. Acrylic Emulsion Manufacturing Facility (CRU-1, 2 Process and Emul. Area B):

(1) The sources in this facility are grouped together as follows:

(a) CRU Area

(1) CRU-1 Polymerization Reactor (12,000 gallons)
(2) CRU-2 Polymerization Reactor (12,000 gallons)
(3) CRU-1 Monomer Emulsion Tank (12,000 gallons)

CONDITIONS (continued):

(4) CRU-2 Monomer Emulsion Tank (12,000 gallons)
(5) Additive Tank No. 1 (2,400 gallons)
(6) Additive Tank No. 2 (3,000 gallons)

(b) Building 66

(1) Two (2) Reactors
(2) Four (4) Mix Tanks
(3) One (1) Wastewater Collection Tank
(4) Two (2) Scrubbers

(2) The CRU Process shall consist of two reactors and each reactor shall be contr by its own scrubbing system consisting of two packed towers in series with v as scrubbing medium. The scrubber water shall flow countercurrent to the ve gases and shall drain to the whitewater collection system.

(3) An operating pressure drop of at least 3 in. w.g. shall be maintained across ca the scrubbers and a water flow rate of at least 20 gpm shall be maintained.

(4) Equipment shall be provided so that at the request of the Department the following can be measured:

(a) pressure drop across the scrubber, utilizing a differential manometer, equivalent.

(b) water flow rate to the scrubber, utilizing a rotameter, or equivalent.

(5) There is no restriction in operating hours for the batch operation of acrylic emulsions.

C. Experimental Acrylic Emulsion Unit (CRU-X Process/Emulsions Area):

(1) The CRU-X Process shall consist of

(a) Two (2) Reactors (3000 and 500 gallons)
(b) Two (2) Mix Tanks (3000 and 500 gallons)
(c) Three (3) Drain Tanks (4077 gallons each)
(d) Three (3) Additives Tanks (204, 730, and 132 gallons)
(e) Eight (8) Small Mix Tanks
(f) Three (3) Blend Tanks (4500, 1500, and 150 gallons)

CONDITIONS (continued):

(2) The V OC emissions from this process shall be controlled by:
1 - scrubber: 3 packed column in series; 1- double pipe exchanger condenser (49 ft~ contact surface; 13-1" tubes) used on 3000 gallon reactor intermittently, and 1- double pipe exchanger condenser (20 ft~ contact surface; 31-1" tubes) used on 500 gallon reactor intermittently.

(3) An operating pressure drop of at least 3 in. w.g. shall be maintained across the scrubber; a flow rate of at least 10 gpm of 10% caustic solution in the packed tower columns 1 and 2, and a flow rate of at least 3 gpm of fresh water in the column 3 shall be maintained.

(4) Equipment shall be provided so that at the request of the Department the following can be measured:

(a) pressure drop across the scrubber, utilizing a differential manometer, or equivalent.

(b) water flow rate to the scrubber, utilizing a rotameter, or equivalent.

(5) There is no restriction in operating hours for the experimental acrylic emulsions unit.

D. Miscellaneous Sources:

(1) Tank Farm: These above ground fixed roof storage tanks may contain raw materials including Methyl Methacrylate (MMA), Ethyl Acrylate (EA), Butyl Acrylate (BA), Styrene, Vinyl Acetate (VA), Acrylonitrile (AN), 2 Ethyl Hexyl Acrylate (2-EHA), and Butyl Lactate (BL).

(2) Finished Product Storage Tank and Tank Truck Loading: Finished acrylic emulsions are stored in the storage tanks and/or loaded into tank trucks for transfer. The emissions are associated with the tank headspace displacement of residual monomers present in the emulsions.

(3) Transfer Piping: The fugitive emission sources are piping, pumps, and valves associated with storage and delivery equipment for raw materials.

(4) Whitewater Pits in Wastewater Operations: The monomer emissions are 'breathing' air emissions from the whitewater pits (wastewater from Emulsion area) and sandbeds.

CONDITIONS (continued):

E. The following RACT determinations shall be implemented for the sources in the Emulsion Area:

(1) CRU and CRU-X Processes: The existing scrubbers with at least 98% removal efficiency are considered RACT for the two process vents.

(2) CRU and CRU-X Ventilations Stacks: Operation of the drain tanks with good operating practices and a visual leak detection and repair (LDAR) program for the building fugitives are considered RACT.

(3) Tank Farm: For those storage tanks which meet the applicability requirements, RACT shall be compliance with 25 Pa. Code Sections 129.56 and 129.57.

(4) Storage Tank and Tank Track Loading: Good operating practices with no additional control is considered RACT.

(5) Transfer Piping Fugitive Emissions: A visual leak detection and repair (LDAR) program for the transfer piping is considered RACT.

(6) Whitewater Pits: Good operating practices is considered RACT.

CONDITIONS (continued):

7. AtoHaas Area

A. Emissions from the sources in this area shall be limited to the following:

Source/Group	VOC Emissions, lbs./hr.	VOC Emissions, lbs./yr.*
PM-1 and PM-2 Scrubber		15,172
PM-1 Die Exhaust		4,445
PM-1 Pelletizer		1,275
PM-2 Pelletizer		1,261
PM-1 Additive Tanks Scrubber	0.078	683
PM-2 Additive Tank		70
PM-2 Vortex Scrubber	2.0	8,015
n-DDM Storage Tank		100
PM-1 Additive Tanks Spot Vents		526
Monomer Mix Tank Spot Vents		438
PM-1 Fugitive Emissions		8,585
PM-2 Fugitive Emissions		855
Transfer Piping Fugitive Emissions		112
Line 15 Scrubber		88
Line 15 Die Exhaust		1,433
Line 16 Die Exhaust		1,433
Line 16 Vacuum Vent		1,064
Miscellaneous Minor Sources		313
Total:		**45,868**

*as a 12 month rolling sum

CONDITIONS (continued):

B. Acrylic Molding Resin Process

(1) The sources in this area are: PM-1 and PM-2 continuous polymerization and extrusion production lines, six (6) monomer mixing tanks, two (2) dump tanks, seven (7) vac pumps (liquid ring), two (2) vent receiver (59 gallon each), two (2) run down tanks, two (2) extruder hub seal enclosure, one (1) chemical sewer tank, one ethyl acrylate weigh tank, one (1) n-DDM storage tank, and four (4) additive tanks (each containing Butyl Lactate).

(2) Miscellaneous minor sources include Beringer Jet Cleaner, the QC lab, the Color lab, and the Development lab.

(3) The control devices in this area are: one (1) 2-column packed tower PM-1/PM-2 common scrubber, one (1) additive tanks venturi absorber/scrubber, and one (1) PM-2 certified vortex scrubber for die exhaust, and one (1) Line 15 scrubber.

C. PM-1 and PM-2 Common Scrubber:

(1) The minimum overall efficiency of these two packed column scrubber working in series shall be 95%.

(2) An operating pressure drop of maximum 8 in. w.g. shall be maintained across each column and a water flow rate of at least 60 gpm to each column shall be maintained.

(3) Equipment shall be provided so that at the request of the Department the following can be measured:

(a) pressure drop across the scrubber, utilizing a differential manometer, or equivalent.

(b) water flow rate to the scrubber, utilizing a rotameter, or equivalent.

(4) The scrubber parameters shall be continuously monitored and daily reports shall be generated with hourly readings.

CONDITIONS (continued):

D. PM-1 Additive Tanks Scrubber:

(1) The minimum overall efficiency of this liquid jet eductor-type venturi absorber/scrubber manufactured by Koertrol Model No. 7014 shall be 75%.

(2) An operating pressure drop of maximum 5 in. w.g. shall be maintained across the throat of the scrubber and a water flow rate of at least 5 gpm to the scrubber shall be maintained.

(3) Equipment shall be provided so that at the request of the Department the following can be measured:

(a) pressure drop across the scrubber, utilizing a differential manometer, or equivalent.

(b) water flow rate to the scrubber, utilizing a rotameter, or equivalent.

(4) The scrubber parameters shall be monitored and recorded daily.

E. n-DDM Storage Tank: This tank shall be equipped with a closed loop vapor recovery and carbon adsorption system.

F. PM-2 Vortex Scrubber for Die Exhaust:

(1) The minimum overall efficiency of this centrifugallon vortex scrubber manufactured by Centrifield Model No. 2300 shall be 60%.

(2) An operating pressure drop of at least 4 in. w.g. shall be maintained across the scrubber and a water flow rate of at least 10 gpm to the scrubber shall be maintained.

(3) Equipment shall be provided so that at the request of the Department the following can be measured:

(a) pressure drop across the scrubber, utilizing a differential manometer, or equivalent.

CONDITIONS (continued):

(b) water flow rate to the scrubber, utilizing a rotameter, or equivalent.

(4) The scrubber parameters shall be monitored and recorded once every shift.

G. Line 15 Scrubber:

(1) The minimum overall efficiency of this countercurrent packed column scrubber shall be 95%.

(2) An operating pressure drop of at least 0.5 in. w.g. shall be maintained across each column and a water flow rate of at least 2 gpm to each column shall be maintained.

(3) Equipment shall be provided so that at the request of the Department the following can be measured:

(a) pressure drop across the scrubber, utilizing a differential manometer, or equivalent.

(b) water flow rate to the scrubber, utilizing a rotameter, or equivalent.

(4) The scrubber parameters shall be monitored and recorded once every shift.

H. The following RACT determinations shall be implemented for the sources in the AtoHaas Area:

(1) PM-1 and PM-2 Scrubbers: The existing packed scrubbers with a minimum 98% removal efficiency is considered RACT.
(2) PM-1 Die Exhaust: This source shall be operated with good operating practices.
(3) PM-1 and PM-2 Pelletizer Exhausts: Good operating practices shall be followed.
(4) PM-1 and PM-2 Additive Tanks: The existing scrubber for the PM-1 Additive Tank Vent is considered RACT. Good operating procedures for the PM-2 Additive Tank Vent is considered RACT.
(5) PM-2 Die Exhaust: The vortex scrubber is considered PACT.

CONDITIONS (continued:

(6) n-DDM Storage Tank: The closed loop vapor recovery and carbon adsorption system installed for this tank represents RACT.

(7) PM-1 Additive Tank Spot Ventilation: Good operating practices shall be followed.

(8) Monomer Mix Tank Spot Ventilation: Good operating practices shall be followed.

(9) PM-1 Fugitive Emissions: Visual leak detection and repair (LDAR) program as submitted to the Department shall be considered PACT.

(10) PM-2 Fugitive Emissions: Visual leak detection and repair (LDAR) program as submitted to the Department shall be considered RACT.

(11) Storage Tank Transfer Piping: Visual leak detection and repair (LDAR) program as submitted to the Department shall be considered RACT.

(12) Line-15: The existing Line 15 packed tower scrubber is considered RACT for this source.

(13) Line-15 and Line-16 Die Exhausts: Good operating procedures shall be followed.

(14) Line-16 Vacuum Vent: Good operating procedures shall be followed.

(15) Miscellaneous Minor Sources: Good operating procedures shall be followed.

CONDITIONS (continued):

8. Polymers Area

A. Emissions from the sources in this area shall be limited to the following:

Source/Group	VOC Emissions, lbs./yr*	NOx Emissions, lbs./yr.*
MMA Distillation Vacuum Jets + MMA Scrubber	10,000	
Buildin 39 Process Tanks	287	
Building 39 Fugitive Emissions	8,534	
Storage Tank Vents	7,249	
Bulk Loadin Operations	2,044	
Storage Tank Fugitives	4,579	
PQR and SCT.Process Vents	2,000	
# 10 Kettle Incinerator	377	2,000
# 7 Kettle Scrubber	54,584	
# 7 Kettle In-Process Vessels	2,778	
Tank Truck Loadin	2,943	
Buildin 30 Fugitives	18,867	
Filter Pot Spot Ventilation	1,246	
Pol 'bo Process Vents	2,500	
Buildin 34 Fugitives	400	
Quali Control Laborato	300	
Development Laborato	10	
Shipping Department	50	
Total:	**118,748**	2,000

* - as a 12 month rolling sum

CONDITIONS (continued):

B. Monomer Loading and Storage Facility:

(1) The sources in this area are:

(a) Four storage tanks as follows:

Storage Tank No.	Size, Gallons	Stores
116	15,000	Isobutyl Methacrylate
117	15,000	Isobutyl Methacrylate
119	150,000	Butyl Acrylate
120	150,000	Ethyl Acrylate

(b) 1 - tank truck loading operation with vapor balance

(c) 1 - tank (rail) car loading operation with vapor balance

(2) The sources do not have any control device.

C. Polytribo Batch Suspension Polymerization Process:

(1) Building 34 houses the following sources:

One 4000 gallon polymerization kettle One 2000 gallon monomer mix tank One 4500 gallon process vessel One 700 cubic feet process vessel One 550 cubic feet process vessel One dryer One 700 cubic feet vacuum dryer

(2) The control equipment for the process shall be a Southern Heat Exchanger Corporation vertical shell and tube condenser. A water flow rate to the condenser of, at least, 100 gpm shall be maintained on any occasion that the source is operated.

(3) The VOC emissions from the sources and the control equipment combined exhausting to the outdoor atmosphere shall not exceed 0.285 lb/hr.

(4) The operating hours of this source shall be limited to 8,230 hours per year.

CONDITIONS (continued):

D. Methyl Methacrylate (MMA) Distillation Process:

(1) The sources in this area are:

four 10,000 gallon storage tanks (610, 615, 5000, 5100), two 37,500 gallon storage tanks (625, 630), one 25,000 gallon storage tank (635), two 150,000 gallon storage tanks (405, 127), two 1,000 gallon inhibitor mix tank (44A, B), one 1,500 gallon inhibitor mix tank (44N), one cold MMA transfer station (40,OOOlbs), four vacuum jet stacks (31, 200, 600, 150), one 3,500 gallon TSB tank (Building 39), and one 500 gallon distillate tank (200).

Control Equipment

Rohm and Haas packed column scrubber (scrubber)

(2) Emission Limitations

The volatile organic compound (VOC) emissions from the source(s) indicated above shall not exceed 8 pounds per hour and shall not exceed 5 tons per year on a 12 month rolling sum calculated monthly.

(3) Operational Requirements

The operating pressure drop of at least 0.14 inches w.g. and a water rate of at least 50 gprn to the packed tower scrubber shall be maintained. The process shall produce 220 million pounds of product per year or less. The owner has the option of submitting to the Department for approval alternative methods to document compliance.

(4) Scrubber Outages

In the case of any scrubber outages due to maintenance or scrubber malfunction, the company shall reduce heat supply to the MMA distillation column and discontinue distillation operation. If the scrubber cannot be repaired and placed back into service within 24 hours of the outage event, the company shall completely shutdown the MMA distillation process and remove any residual MMA from the still.

CONDITIONS (continued):

(5) Monitoring Requirements

A. The owner shall monitor the MMA throughput on all sources listed above each month.

B. The owner shall monitor the operating pressure drop and the water flow rate at the scrubber at least once every eight hours when the scrubber is operating.

C. The owner shall monitor the hours of operation of the process.

D. Equipment (a differential manometer or equivalent, as approved by the Department) shall be provided so that at the request of the Department the pressure drop across the throat of the scrubber can be measured.

E. Equipment (a rotameter or equivalent, as approved by the Department) shall be provided so that at the request of the Department the water flow rate to the scrubber can be measured.

F. The owner shall monitor the actual emissions from the sources to document compliance with the emission limitations.

(6) Recordkeeping and Reporting Requirements

A. The owner shall record and submit to the Department as requested all parameters requiring monitoring. A record shall be kept of all scrubber outages as described above.

B. Records required under this Operating Permit shall be kept for a period of five (5) years and shall be made available to the Department upon its request.

(7) Testing Requirements

Prior to issuance o f an Operating Permit the company must perform a stack test on the sources covered by this Plan Approval in accordance with the provisions of Chapter 139 to show compliance with the 8 pounds of VOC per hour limitation above. The stack test shall be performed while the aforementioned source is operating at the maximum rated capacity as stated on the application.

CONDITIONS (continued):

E. The following RACT determinations shall be implemented for the sources in the Polymers Area:

(1) MMA Distillation Vacuum Jets: The vacuum jets shall be tied to the MMA scrubber. This is considered RACT.

(2) Building 39 Process Tanks: Third Stage Bottoms (TSB) tank and the 200 Distillate tank shall be tied to the MMA scrubber as part of RACT. Remaining in-process tanks shall be operated with good environmental practices.

(3) Building 39 Fugitive Emissions: The MMA process and the associated storage tanks shall be operated under a leak detection and repair program (LDAR).

(4) MMA Scrubber: As part of the RACT, MMA vacuum jet stacks, Building 39 TSB, and 200-distillate tank shall be tied to the MMA scrubber. The scrubber control efficiency shall be at the minimum 95%.

(5) Storage Tank Vents: Compliance with applicable requirements of 25 Pa. Code Sections 129.56 and 129.57 is considered RACT. Tanks with closed loop vapor recovery system shall have the systems in place.

(6) Bulk Loading Operations: Good environmental practices shall be followed.

(7) Storage Tank Fugitives: Compliance with 25 Pa. Code Section 129.71 is considered RACT for the MMA transfer piping. The boiler and industrial furnaces (BIF) LDAR program is considered PACT for the TSB storage tanks. For the transfer piping including all storage tank transfer piping, a visual inspection program is considered RACT.

(8) PQR and SCT Process Vents: Good operating procedures shall be followed.

(9) No. 10 Kettle Incinerator: For emissions of VOC, destruction efficiency of the incinerator shall be at the minimum 99%. For emissions of NOx, installation, maintenance and operation of the incinerator as per manufacturers specifications shall be RACT.

(10) No. 7 Kettle Scrubber: Process modification by reduction in nitrogen purge rate and continued operation of the scrubber is considered RACT.

CONDITIONS (continued):

(11) No. 7 Kettle In-Process Vessels: Process modification by reduction in nitrogen purge in the dilution tank and by tying in No. 7 monomer mix tank and No. 7 dilution tank to the No. 7 Kettle scrubber is considered PACT.

(12) Tank Truck Loading: Good operating procedure shall be followed.

(13) Building 30 Fugitives: The spot ventilation system shall be modified to capture 30% of the emissions from the drum filling system and direct them to the No. 10 Kettle Vent Incinerator. Modification to the rework system shall be carried out to reduce evaporative losses from the rework system by 60%. A visual LDAR program shall be followed for all Building 30 fugitives.

(14) Filter Pot Spot Ventilation: Good operating procedures shall be followed.

(15) Polytribo Process Vents: Compliance with hourly emission limit of 0.285 lb/hr is considered RACT.

(16) Building 34 Fugitives: Visual Inspection Program as submitted with the application and approved by the Department.

(17) Quality Control Laboratory: Good operating procedures consistent with environmental regulations.

(18) Development Laboratory: Good operating procedures consistent with environmental regulations.

(19) Shipping Department: Good operating procedures consistent with environmental regulations.

CONDITIONS (continued):

9. Plastics Additives Area

A. Emissions from the sources in this area shall be limited to the following:

Source/Group	Peak VOC Emissions, lbs/hr.	VOC Emissions, lbs./yr.*	NOx Emissions, lbs./yr.*
Spray Dryer	20	68,900	8,817
Kettle Scrubber	0.163	1,430	
Tanks Truck Loadin		12	
Railcar Loadin		0	
Filter Units (Bldg. 66 & sweco)	<0.001	10	
Storage Tanks		10	
Bldg. 66 Fugitive Emissions		6,000	
Transfer Piping Fugitive Emissions		800	
Raymond Mill		0	
Oven Plant Exhaust Stack		39	
Oven Plant Fugitive Emissions		4,640	
Total:		**85,190**	**8,817**

*as a 12 month rolling sum

B. Plastics Additives Process:

(1) Emulsion Preparation Process:

These sources are in building Nos. 66, 109 and 115: There are two identical emulsion preparation trains. Each train shall consist of:

Small Emulsion Tank (3,500 gallons)
Large Emulsion Tank (12,000 gallons)
Polymer Kettle (12,000 gallons)
Activation Tank (360 gallons)
Catalyst Tank (360 gallons)
Catalyst Tank (35 gallons)
Soap Tanks (2-5000 gallons each)

CONDITIONS (continued):

(2) Spray Dryer:

Manufacturer: Niro
Model: F60D-A; Serial No. 84213
Fuel: Natural Gas
Rated Heat Input: 12 MMBtu/hr
Max. Rated Heat Input: 17.5 MMBtu/hr
Operating Hours: 7650

C. The following RACT determinations shall be implemented for the sources in the Plastics Additives Area:

(1) Spray Dryer Exhaust Stack: Semi-annual mass balance analysis to show compliance with VOC emission limit. Implementation of NOx RACT shall be installation, maintenance and operation of the dryer, as per manufacturers specifications.

(2) Kettle Scrubber: Operation of the scrubber with a minimum control efficiency of 98% is considered RACT.

(3) Tank Truck Loading: Good operating procedures consistent with environmental regulations.

(4) Railcar Loading: Deminimus source.

(5) Filter Units (Building 66 and Sweco): Good operating procedures consistent with environmental regulations.

(6) Storage/Pit/Blend Tanks: Emissions do not meet the applicability requirements of 25 Pa. Code Sections 129.56 and 57. Existing controls are considered RACT.

(7) Building 66 Fugitive Emissions: Visual LDAR program is considered RACT.

(8) Transfer Piping Fugitive Emissions: Visual LDAR program is considered RACT.

(9) Oven Plant Exhaust Stack: Good operating procedures consistent with environmental regulations.

(10) Oven Plant Fugitive Emissions: Visual LDAR program is considered RACT.

CONDITIONS (continued):

10. Facilities Area

A. Emissions from the sources in this area shall be limited to the following:

Source/Group	VOC Emissions, lbs/yr *	NOx Emissions, lbs/MM Btu	NOx Emissions, lbs/yr
WWTP Tanks	5,000		
WWTP Scrubber	1,060		
Generators	309		172,200
Boiler Nos. 5, 6, 7 and 8	16,991	0.467	1,269,300
Fuel Storage	4,442		
Transfer Piping	514		
Maintenance	200		
TOTAL	**28,516**		**1,441,500**

* as a 12 month rolling sum

B. Wastewater Treatment Plant:

(1) Emissions from the splitter box (SB-1), the emergency spill tank (T-4) and the skimmer tank (T-8) in the wastewater treatment plant (WWTP) shall be controlled by a vertical packed scrubbing system.

(2) The scrubber shall be operated intermittently. The scrubber system must be operated under the following conditions:

(a) When the access doors of the splitter box (SB-1) are opened to remove floatable solids from the liquid surface, the scrubbing system will be started manually.

(b) When the liquid level in the emergency spill tank (T-4) reaches above 10,000 gallons, the scrubbing system will be started automatically.

(c) When the liquid level in the skimming tank (T-8) reaches high level (predetermined head), the scrubbing system will be started automatically.

(3) An operating pressure drop of at least 4.5 in. w.g. shall be maintained across the scrubber, and a water flow rate of 108 gpm to the scrubber shall be maintained.

(4) Equipment shall be provided so that at the request of the Department the following can be measured:

CONDITIONS (continued):

(a) pressure drop across the scrubber, utilizing a differential manometer, or equivalent.

(b) water flow rate to the scrubber, utilizing a rotameter, or equivalent.

(5) The removal efficiency of odorous compounds from the gas stream for the scrubber shall be at the minimum 90% by weight.

(6) The scrubber parameters shall be monitored and recorded whenever operated.

C. Generators: The description of the generators are as follows:

Description	**2.0 MW Diesel Generator**	**40 KW Diesel Generator**
Manufacturer	Detroit Diesel	White
Model No.	2 12V-149	VA 437659 02300 x 256
No. of Units	One (1)	One (1)
Rated Capacity, KW	2,060	30
Hourly Fuel Consumption, h	160	2.4
Fuel Type	No. 2 Fuel Oil	No. 2 Fuel Oil
Use	Emergency Standby	Emergency Standby
Operating Hours	500	500

(2) The generators shall not be operated for more than 500 hours in a consecutive twelve month period.

(3) Recordkeeping and Monitoring Requirements:

(a) The owner and operator shall keep records to demonstrate compliance with § 129.93 (c)(5) for the generators.

(b) The owner and operator shall monitor and keep a record of the fuel usage for each generator whenever used.

(e) The hours of operation of each of the generators shall be recorded in a log book with hours of operation attributed to each generator marked clearly.

CONDITIONS (continued):

(d) Manufacturers specifications for maintenance and operation shall be kept and made available to Department personnel to establish compliance.

(e) Records of repair and maintenance shall be kept in a log book.

(f) Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the above requirements.

D. Boilers:

(2) Nos. 7 and 8 Boilers

(a)

Manufacturer:	Combustion Engineering
Model No.:	30-A-12
Rated Capacity:	137 MM Btu/hr (each)
Peak Capacity:	137 MM Btu/hr (each)
Boiler Efficiency:	84%

(c) Each boiler shall be equipped with a multi-staged low NOx burner manufactured by Coen Company, Inc.

(i) Monitoring Requirements: Continuous Emission Monitors (CEMs) shall be installed, certified, operated and maintained for both the boilers in accordance with the Department's "Continuous Source Monitoring Manual" Revision No. 5, dated 1993 and latest revision (CSMM) to continuously monitor the following emission and operating parameters:

oxides of nitrogen (NOx)

(j) Testing Requirements: Source tests shall be conducted for the following:

- volatile organic compounds, VOC
- oxides of nitrogen, NOx (during the initial stack test in conjunction with CEMs certification)

CONDITIONS (continued):

E. The following RACT determinations shall be implemented for the sources in the Facilities Area:

(1) WWTP Process Tanks: Breathing and working losses from these tanks are reduced by improved design including constructing roofs over some tanks. This is considered RACT for the tanks.

(2) WWTP Splitter Box, Emergency Spill Tank and Skimming Tank: The existing scrubber shall be considered RACT.

(3) Generators: The generators in adopting Presumptive RACT under Section 129.93(c)(5) of Pa. Title 25 shall follow the manufacturers specifications for the installation, maintenance and operation of the sources.

(4) Boilers:

(a) For Boiler Nos. 5 and 6, burner cap trials along with operation of these boilers in emergency situations only is considered RACT.

(b) For Boiler Nos. 7 and 8, installation of low NOx burners with burner cap trials is considered RACT.

(5) Fuel Storage: Existing controls are considered RACT.

(6) Transfer Piping: BIF LDAR program is RACT for sources covered under that program. For the other sources, a visual inspection program as approved by the Department is considered RACT.

(7) Maintenance: For both solvent baths and Beringer Jet Cleaner, good operating procedures consistent with environmental regulations.

CONDITIONS (continued):

11. Bristol Research Park

A. Emissions from the sources in this area shall be limited to the following:

Source/Group	VOC Emissions, lbs./yr.'	NOx Emissions, lbs/yr.*
Bldg. 64	0	
Bldg 105B	514	
Bldg. 123 BEL	4,485	
Bldg. 134-Vent 1	200	
Bldg. 134-Vents 2,3,4,5,7,8	0	
Bldg. 134-Vent 6	250	
Bldg. 134-Vent 9	260	
Bldg. 147-Vent 1	255	
Bldg. 147-Vent 2	264	
Bldg. 147-Vent 3	0	
Bldg. 147-Vent 4	550	
Bldg. 147-Vent 5	18	
Bldg. 147-Vent 6	0	
Bldg. 147-Vent 7	6	
Bldg. 137-Vent 1	210	
Bldg. 137-Vent 2	1,000	1,220
Bldg. 117	30	
Bldg. 155-Vents 1,2,3	246	
Bldg. 90	14	
Total:	8302	1220

* as a 12 month rolling sum

B. Multi-purpose Reactor Pilot Plant (Bldg. 137)

(1) The scrubbers in this building shall treat air vented from the Synthesis and Ten Gallon Reactor (TGR) area reactors, feed tanks, and vacuum pumps. The scrubbers have the following description:

Three (3) - Luftrol - Packed column countercurrent flow scrubbers (Nos. 120, 70 and 480)

CONDITIONS (continued):

Croll Reynolds portable jet venturi fume scrubber (No. 193)

(2) An operating pressure drop of 6 in. w.g. shall be maintained across the throat of the venturi scrubber; and a pressure drop of 0.5-3.5 in. w.g. shall be maintained across each column of the packed tower scrubber. The flow rate and type of liquor in the scrubbers may be variable for effective control.

(3) The thermal oxidizer in this building shall control the air from the scrubbers and air from the spot vent system in the Synthesis area.

(4) The thermal oxidizer shall be operated at a minimum temperature of 1500 °F (and maximum temperature of 1800 °F) and an exhaust gas retention time of 1.0 second.

(5) Equipment shall be provided so that at the request of the Department the following can be measured:

(a) pressure drop across the scrubber, utilizing a differential manometer, or equivalent.

(b) water flow rate to the scrubber, utilizing a rotameter, or equivalent.

(c) the temperature of the thermal oxidizer.

(6) The scrubber parameters shall be monitored and recorded per batch basis whenever operated.

(7) The total reactor volume in operation at anytime shall not exceed 1,500 gallons per day.

(8) Records of process data for each process with a potential to emit volatile organic compounds (VOCs) or air toxics must be maintained on a per batch basis.

C. The following RACT determinations shall be implemented for the sources in the Bristol Research Park:

(1) Building 64: This building shall be shut down permanently.

(2) Building 105B: Good operating procedures shall be followed.

CONDITIONS (continued):

(3) Building 123: Good operating procedures shall be followed. In addition, for fugitive emissions, spill and odor protocols adopted by Rohm and Haas and approved by the Department shall be followed.

(4) Building 134: Good operating procedures shall be followed.

(5) Building 147: Good operating procedures shall be followed.

(6) Building 137: The existing scrubbers and the thermal oxidizer are considered RACT. The thermal oxidizer shall be installed, maintained, and operated in accordance with manufacturer's specifications. For fugitive emissions, spill and odor protocols adopted by Rohm and Haas and approved by the Department shall be followed.

(7) Building 117: Good operating procedures shall be followed.

(8) Building 155: Good operating procedures shall be followed.

(9) Building 90: Good operating procedures shall be followed.

12. Recordkeeping and Reporting Requirements

A. The owner and operator shall keep records to demonstrate compliance with §§ 129.91-129.94.

B. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §§ 129.91-129.94 are met.

C. Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement.

D. The records shall be retained for at least 5 years and shall be made available to the Department on request.

CONDITIONS (continued):

13. Stack Test Requirements

A. Within one hundred and eighty days (180) after receiving this Operating Permit, the owner/operator shall conduct all stack tests required for the different sources identified within this Operating Permit. Tests shall be conducted in accordance with the provisions of 25 Pa. Code Chapter 139.

B. At least thirty (30) days prior to the test, the Regional Air Quality Manager shall be informed of the date and time of the test(s).

C. At least sixty (60) days prior to the test, the owner/operator shall submit to the Department for approval, the procedures for the test(s) and a sketch with dimensions indicating the location of sampling ports and other data to ensure the collection of representative samples.

D. Within thirty (30) days after the source test(s), two copies of the complete test report, including all operating conditions, shall be submitted to the Regional Air Quality Manager for approval.

14. General Requirements

F. The expiration date shown on this RACT operating permit is for state purposes. For Federal enforcement purposes, the conditions of the operating permit which pertains to the implementation of the RACT regulations shall remain in effect, as part of the State Implementation Plan (SIP), until replaced pursuant to 40 CFR 51 and approved by the U.S. Environmental Protection Agency (EPA).

Appendix A
Screening Risk Calculations for Rohm and Haas' Bristol Facility
Emission Limits and Risks

Chemical Name	Emission Rate (g/sec)	Emission Rate (lb/hr)	Unit Risk (m^3/ug)	Reference conc. (ug/m^3)	STEL/40 (ug/m^3)	3xTWA/20 (ug/m^3)	IDLH/20 (ug/m^3)	LC50/100 (ug/m^3)	Max. 1-hr Conc. (ug/m^3)	Acute Hazard Index	Annual Conc. (ug/m^3)	Cancer Risk	Chro. Haza Inde
Arsenic	7.85E-06	'6.22E-05	4.30E-03	NL	NL	1.50	250.00	NL	4.57E-05	3.05E-05	1.51E-06	6.49E-09	
Beryllium	1.10E-05	'8.74E-05	2.40E-03	NL	NL	0.30	200.00	NL	6.41E-05	2.14E-04	2.11E-06	5.07E-09	
Cadmium	5.59E-05	'4.44-04	1.80E-03	NL	NL	1.50	450.00	NL	3.26E-04	2.17E-04	1.07E-05	1.93E-08	
Chromium (Total)	7.93E-04	'6.30E-03	NL	NL	NL	75.00	12500.00	NL	4.62E-03	6.16E-05	1.52E-04		
Chromium (VI)	2.38E-06	'1.89E-05	1.20E-02	NL	NL	1.50	NL	NL	1.39E-05	9.24E-06	4.57E-07	5.49E-09	
Chromium (III)	5.59E-05	'4.44E-04	NL	1.00E+03	NL	75.00	1250.00	NL	3.26E-04	4.34E-06	1.07E-05		1.07E
Antimony	2.93E-05	'2.32E-04	NL	3.00E-01	NL	75.00	2500.00	NL	1.71E-04	2.27E-06	5.63E-06		1.88E
Barium	1.04E-04	'8.30E-04	NL	5.00E+01	NL	75.00	2500.00	NL	6.06E-04	8.07E-06	2.00E-05		4.00E
Lead	1.73E-03	'1.37E-02	NL	9.00E-02	NL	22.50	5000.00	NL	1.01E-02	4.48E-04	3.33E-04		3.69E
Mercury	5.78E-03	'4.59E-02	NL	3.00E-01	NL	3.75	500.00	NL	3.37E-02	8.98E-03	1.11E-03		3.70E
Silver	3.13E-05	'2.49E-04	NL	3.00E+00	NL	1.50	500.00	NL	1.82E-04	1.22E-04	6.02E-06		2.01E
Thallium	3.13E-04	'2 .49E-03	NL	5.00E-01	NL	15.00	750.00	NL	1.82E-03	1.22E-04	6.02E-05		1.20E
Hydrogen Chloride	1.34E-01	'1.07E+00	NL	7.00E+00	760.00	ND	3800.00	NL	7.80E-01	1.03E-03	2.58E-02		3.68E
Ethyl Benzene	8.00E-01	'6.33E+00	NL	1.00E+03	13575.00	65100.00	176400.0	NL	4.66E+00	3.43E-04	1.54E-01		1.54E
Methlene Chloride	8.00E-03	'6.33E-02	4.10E-06	3.00E+03	NL	26100.00	405950.0	NL	4.66E-02	1.78E-06	1.54E-03	6.30E-09	5.13E
Tetrachloroeth lene	8.00E-03	'6.33E-02	4.80E-07	8.10E+01	17125.00	25500.00	51675.00	NL	4.66E-02	2.72E-06	1.54E-03	7.38E-10	1.90E
											Total =	**4.34E-08**	

' Permit Limits

APPENDIX B

Classification of Waste Derived Liquid Fuels

The following definitions will be used to classify waste derived liquid fuels:

1. Waste Derived Liquid Fuel - Any liquid fuel consisting of, containing, or derived from a waste substance or substances including, but not limited to, waste defined as hazardous waste, automotive crankcase oil, other automotive liquids, gasoline and oil truck and barge residues, oil spill clean up residues, oils derived spill clean up residues, oils derived from wastewater, metal working oils, turbine lubricating oils, diesel lubricating oils, hydraulic fluids, quenching oils, dielectric fluids, solvents, tars, and by-products or off specification products from manufacturing processes.

   On-site generated petroleum refinery by-products returned to the refinery process shall not cause liquid fuels produced by the refinery to be classified as waste derived, if the contaminant levels in the liquid fuels do not exceed the limits for waste derived liquid used oil fuels and the facility is refining virgin crude oil.

2. Hazardous Waste Derived Liquid Fuel - Any waste derived liquid fuel containing an aggregate of Appendix VIII low energy contaminants greater than 1,000 ppm or an identified listed or characteristic hazardous waste with a higher heating value less than 8,000 Btu per pound.

3. Used Oil - Any oil that has been refined from crude oil, used, and as a result of such use, is contaminated by physical and chemical impurities.

4. Used Oil Fuel - Any waste derived liquid fuel derived from, or blended with used oil.

5. Off-Specification Used Oil Fuel - any waste derived liquid fueled derived from. or blended with used oil which exceeds any of the specified acceptable levels (ppm by weight) given below:

Constituent	Acceptable Levels
Arsenic	< 5 ppm
Cadmium	< 2 ppm
Chromium	< 10 ppm
Lead	< 100 ppm
Total Halides	< 1,000 ppm

6. Toxic Substances Waste Derived Liquid Fuel - Any waste derived liquid fuel containing detectable levels of PCB (10 ppm is the detection limit accepted by the Department for used oil fuels).

APPENDIX C

Only the following Rohm and Haas waste codes shall be fired as waste fueled to the boilers:

9-3448, 9-3942, 9-3777, 9-3359, 9-3776, 9-3642, 9-1225, 0-1578

The following organic materials represent primary constituents which may be found in one or more of the above listed waste streams.

Acrylic Ester Monomers including:

Ethyl Acrylate
Butyl Acrylate
2-Ethylehexyl Acrylate
Methyl Acrylate

Methacrylic Ester Monomers including:

Buthyl Methacrylate
Ethyl Methacrylate
Methyl Methacrylate

Other Monomers:

Acrylic Acid monomer
2-Methacrylamide
Methacrylic Acid monomer
Styrene Monomer
Vinyl Acetate monomer

Low Viscosity Polymer Solutions:

Acrylate copolymers
Methacrylate copolymers
Poly (Methylmethacrylate)
Acrylic: Methacrylic: Styrene copolymers
Acrylic: Styrene copolymers
Urethane type polymers

Solvents:

Acetone, Aromatic 100 & Aromatic 150, Butyl Acetate, Butyl Carbitol, Butyl Cellosolve, **Ethyl Benzene** (Limited to _< 5%), Diisobutylene, Isopropanol, Methanol, Methyl Amyl **Ketone, Methyl Ethyl Ketone**, Methylene Chloride (limited to _< 0.05%), Methyl Monochloroacetate, Mineral Spirits, Propylene Glycol, Propylene Glycol Monomethyletheracetate, Tetrachloroethylene (limited to _< 0.05%), Toulene, Xylene.

APPENDIX C
(continued)

Other Compounds:

Acetic Acid p-Benzoquinone Dimethyl 5-Methyl-2methyleneadipate Dimethyl Phthalate Hydrogen Cyanide (limited to≤ 0.02%) Hydroquinone Hydroquinone-methyl ether Malaic Acid Malaic Anhydride Methyl 2-Hydroxyisobutyrate Methylbeta-methoxy isobutyrate Phenothiazine

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